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Pesticide Fact Sheet Number 175
Strychnine Alkaloid and Sulfate

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This document contains up-to-date chemical information, including a summary of the Agency's regulatory position and rationale, on a specific pesticide or group of pesticides. A Fact Sheet is issued after one of the the following actions has occurred.

1. Issuance or reissuance of a registration standard,
2. Issuance of each special review document,
3. Registration of a significantly changed use pattern,
4. Registration of a new chemical, or
5. An immediate need for information to resolve controversial issues relating to a specific chemical or use pattern.

17. Document Analysis a. Descriptors

Pesticides, regulations, Chemical Information Fact Sheet, Use Patterns, science findings.

b. Identifiers/Open-Ended Terms

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EPA

Pesticide Fact Sheet

Name of Chemical: STRYCHNINE ALKALOID AND SULFATE
Reason for Issuance: SUSPENSION and RESCISSION OF SALES
Date Issued: OCTOBER, 1988
Fact Sheet Number: 175

1. DESCRIPTION OF CHEMICAL

Generic Name: Strychnine Alkaloid $C_{21}H_{22}N_2O_2$
(chemical) Strychnine Sulfate $(C_{21}H_{22}N_2O_2)H_2SO_4+5H_2O$

Common Name: Strychnine

Trade and
Other Names: Nux Vomica

EPA Shaughnessy Code: Strychnine Alkaloid 076901-8
Strychnine Sulfate 076902-6

Chemical Abstracts Service (CAS) Number:

Strychnine Alkaloid 57-24-9
Strychnine Sulfate 60-41-3

Pesticide Type: Vertebrate pesticide.

U.S. and Foreign Producers: All manufacturers import the technical material. Importers include H. Interdonati, Inc.; H. R. Harkins, Inc. and Noris Chemical Co. There are approximately 100 registrants of end-use products. The California Department of Food and Agriculture and California counties are registrants of 37 end use products. The U.S. Department of Agriculture has seven strychnine registrations: 6 end use products and a technical product which is a repackage of an importer's product.

2. USE PATTERNS AND FORMULATIONS:

There are 383 products; 194 are registered for use above ground and 189 are registered for use below ground. The approximately 200 use sites include rangelands, pastures, many crops, forests, and below ground application for pocket gophers and moles.

Formulation Types: Strychnine is usually formulated in grain baits at 0.2% to 2.63% but is also incorporated into a salt block at 5.79%.

3. AGENCY ACTION:

EPA is taking a number of regulatory actions involving strychnine registrations and applications for registrations, since data required to support the registration of strychnine products has not been submitted in accordance with Agency requirements. The Agency is issuing:

1.) A notification of rescission of authority to sell or distribute intrastate products for (CDFA and numerous California counties) which a complete application for Federal registration was not submitted prior to July 31, 1988 in accordance with 40 CFR 152.230. Further, regarding all strychnine applications which are not associated with intrastate products, registration will be withheld pending the receipt and acceptance of required data.

2.) A notice of intent to suspend all registrations which are not in compliance with the submission schedule for data and other information (Colorado, Department of Agriculture; CDFA and numerous California counties; South Dakota Department of Agriculture; Klamath County, Oregon; Nevada Department of Agriculture; USDA; and non-governement registrants for both end-use and technical grade strychnine products.)

These actions against strychnine are independent of the temporary cancellation action required by the April 11, 1988 order of the United States District Court for the District of Minnesota in the case of Defenders of Wildife v. Administrator.

4. BACKGROUND

In March 1972, an Executive Order was issued prohibiting the use of all toxicants, including strychnine, for control of predators on federal lands or in federal programs. In the same year, the Environmental Protection Agency (EPA) cancelled all registrations of strychnine for predator control. In addition, in February 1978, EPA restricted the use of strychnine formulations with concentrations greater than 0.50% to use only by certified applicators. The restriction was based on acute oral toxicity, hazards to nontarget species, and use and accident history.

In 1976, EPA initiated a Special Review (formerly Rebuttable Presumption Against Registration [RPAR]) of the above-ground uses of strychnine. The Special Review criteria that were met or exceeded for above-ground uses are: 1) acute toxicity to mammals and birds; and 2) significant reduction in populations of nontarget organisms and fatalities to members of endangered species.

The Special Review was concluded in October 1983, with publication of a Notice of Intent to Cancel (48 FR 48522). The Notice

allowed continued registration of strychnine for certain above-ground uses with specific label modifications. The Notice also required full cancellation of the uses for the control of prairie dogs, deer mice, meadow mice, chipmunks, marmots/woodchucks on rangeland/ pastures and cropland; all rodents and small mammals (except ground squirrels, marmots/woodchucks) around rock piles and lava outcrops, jackrabbits around airports, and porcupines on nonagricultural sites.

The Agency also required label modifications for uses involving ground squirrels, jackrabbits, kangaroo rats, and cotton rats on rangeland/pastures and cropland; ground squirrels, marmots/ woodchucks, jackrabbits, and porcupines on nonagricultural sites; and birds on cropland and nonagricultural sites. An administrative hearing was convened for the prairie dog, ground squirrel and meadow mouse uses.

In March 1987, the Agency published a Federal Register notice that withdrew the 1983 Notice of Intent to Cancel product registrations for control of prairie dogs, meadow mice, and ground squirrels and allowed these uses to continue if certain protective measures were implemented. This action reflected the terms of the settlement of the administrative hearing. The Agency was sued in 1986 in the U.S. District Court in Minnesota regarding the terms of the settlement agreement by the Defenders of Wildlife and the Sierra Club, who alleged that continued use of strychnine for above-ground use would result in takings of protected wildlife under the Endangered Species Act, the Migratory Bird Treaty Act, and the Bald and Golden Eagle Protection Act. The court ordered EPA to temporarily cancel all registrations of strychnine for above-ground use to protect nontarget species. EPA will issue a Federal Register notice, currently scheduled for mid-September to implement the court's decision.

The Special Review also concluded that efficacy/safety data for ground squirrels should be developed in order to determine the lowest efficacious dosage. These data were required through a Data Call-In (DCI) Notice which was issued in 1984. The Agency's current action with regard to the withdrawal/suspension of strychnine registrations relates to a total of three DCI notices which have been issued:

1. The August 1984 Notice requiring ground squirrel efficacy/ safety data pursuant to the Special Review;

2. An October 1986 Notice requiring the submission of residue chemistry, toxicology, environmental fate, environmental safety and efficacy data for all strychnine products, as

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well as draft revised labels and data compensation forms; and

3. A December 1987, DCI Notice requiring the submission of four additional environmental fate studies.

In October 1987, the Agency met with registrants and interested user groups to explain, among other things, why data were required and how to generate the data.

All strychnine registrants were notified by a December 1987 letter that the Agency would extend the data due dates in the DCIs if the registrants submitted the following items within 30 days: 1) a commitment to fulfill the data requirements contained in the three DCI notices; 2) legible draft revised labels, with the use sites clearly defined; and 3) a Confidential Statement of Formula (EPA Form 8570-4). In addition, schedules were established for progress reports on long-term studies.

The Agency is taking action against all strychnine products because of the lack of progress toward completing the long-term data requirements required in the DCIs, unacceptable qualifications to the commitments to satisfy data requirements, and failure to submit administrative forms.

The Agency is also taking action with regard to the registrations of compound 1080, which is a vertebrate pesticide used principally to control field rodents. The Agency is denying intrastate product applications for registration, cancelling the one technical manufacturer's registration, and suspending the "special local need" registration. A data call-in requiring minimal product chemistry data to support the registtation.

These actions are being taken because of the failure of registrants to satisfactorily respond to DCI requirements concerning compound 1080.